

Renal revascularisation in patients with complete renal artery occlusion: a single centre experience

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Introduction

Atheromatous renovascular disease is a common disease associated with hypertension, CKD and cardiovascular disease. It often follows an asymptomatic chronic course which may be undetected for years. However, acute kidney injury due to renal artery occlusion is an uncommon presentation requiring a high clinical index of suspicion for the prevention of irreversible renal damage. Here we describe 11 cases of renal artery occlusion involving 8 patients in our centre over a period of 12 years. The presentations, imaging, treatment and patient outcomes are described.

Methods

Hospital records were reviewed over the period from 2007 to 2019 and screened for keywords suggestive of acute renal artery occlusion (RAO). Data collected included demographics, comorbidities, renal chemistry, imaging findings, treatment and treatment outcomes.

Findings

11 episodes of RAO were identified in 8 patients. The mean age at presentation was 63 years. All interventions occurred at a single centre. 7 patients were smokers. All patients were hypertensive receiving an average of 4 anti-hypertensive agents. The median baseline eGFR was 49.5ml/min/1.73m². 7 of the episodes were acute presentations comprising of acute kidney injury with oligo-anuria, dyspnoea and uncontrolled hypertension. All patients required renal replacement therapy for management of volume status and they all underwent percutaneous intervention with unilateral stenting. 4 of the episodes were sub-acute presentations and came to the attention of the service through referral to the renovascular clinic. Most commonly these referrals originated in the general nephrology or cardiology clinics. These patients had hypertension but with a sub-acute drop in eGFR and recurrent admissions for acute dyspnoea. One patient required bilateral stents with the others requiring single unilateral stenting. All patients had a significant improvement in their renal function ranging from instant micturition post stenting to one who required renal replacement therapy for 6 months post intervention. The average number of anti-hypertensives reduced from 4 to 2 per patient post intervention. All patients were on an anti-platelet agent post intervention. 50% of the patients required a repeat intervention over a period ranging from 10 months to 60 months after initial intervention.

Conclusion

Acute RAO is an emergency which requires immediate treatment. However, it does require a high index of suspicion to preserve renal function. Treatment include anti-coagulation and thrombolysis/thrombectomy with renal artery stenting. Our case series highlights the importance of high clinical suspicion to identify suitable patients for revascularisation and ongoing close monitoring due to the high risk of recurrent RAO. Timely, revascularisation can restore independent renal function.